CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 99-067

UPDATED WASTE DISCHARGE REQUIREMENTS
AND RECISION OF ORDER NO. 92-087 FOR:

BROWNING-FERRIS INDUSTRIES OF CALIFORNIA, INC.
CORINDA LOS TRANCOS LANDFILL / OX MOUNTAIN SANITARY LANDFILL,
CLASS III SOLID WASTE DISPOSAL SITE
HALF MOON BAY, SAN MATEO COUNTY, CALIFORNIA

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

SITE OWNER AND LOCATION

1. Browning-Ferris Industries of California Inc. (hereinafter called the discharger) owns and operates a Class III municipal refuse disposal site in Corinda Los Trancos Canyon, San Mateo County, located approximately 2 miles northeast of the City of Half Moon Bay, immediately north of Highway 92, as shown on Figures 1 and 2. Figures 1 and 2 are incorporated herein and made part of this Order. The landfill is referred to as both the Corinda Los Trancos and Ox Mountain Landfill; for the purposes of this Order the site will be called the Corinda Los Trancos Landfill.

2. The discharger submitted a Report of Waste Discharge (ROWD) on April 15, 1997 for the purpose of updating the site's Waste Discharge Requirements. The ROWD included design specifications for an alternative landfill liner system, a 9-acre expansion of the existing landfill along the western perimeter, a seven acre landfill boundary line adjustment along the eastern perimeter, and revisions to the groundwater, surface water, leachate, and subdrain monitoring systems. A final CEQA document was not adopted until March 24, 1999. The discharger is currently permitted to operate on 173 acres (called the existing landfill) of their approximately 2786-acre property. The expansion area is located along the western edge of the landfill perimeter and is expected to provide sufficient onsite soil sources for daily, intermediate and final cover material to eliminate the need for soil importation. The discharger estimates the landfills remaining life span to be approximately 28 years, beginning June 1, 1999. The ROWD, including all referenced materials and addendums is hereby incorporated by reference as part of this Order. The discharger submitted the completed Waste Discharge Application on April 30, 1997.

PURPOSE OF ORDER UPDATE

3. The primary objectives of this order are to: 1) Establish revised design criteria for the liner system for existing and specified expansion areas; 2) Requires the submission of special studies necessary for evaluation of the discharger's proposal to include the additional 9-acre westside landfill expansion in the permitted area; 3) Revise the groundwater, surface water, subdrain, and leachate monitoring programs to evaluate the impact to water quality; and 4) Update the Waste Discharge Requirements and bring the site into compliance with Title 27, California Code of Regulations (CCR) and Part 268 (Subtitle D), Title 40 of the Code of Federal Regulations (CFR).

SITE DESCRIPTION AND HISTORY

4. The site is located in portions of Sections 9, 10, and 16 of Township 5 South, Range 5 West, Mount Diablo Base Meridian.

5. The Corinda Los Trancos Landfill originated as a small, 33-acre Class III landfill in the upper portion of the Corinda Los Trancos canyon. This initial landfill received approximately 7.5 million cubic yards of waste from 1976 to 1993. The original landfill is believed to be underlain by a 2-foot thick low permeability base of unknown areal extent. In 1992, the discharger was issued waste discharge requirements for a 140-acre landfill expansion to the presently permitted facility footprint. The 1992 permit design extended the landfill toe approximately 2,700 feet down canyon and requires a composite liner which includes an underdrain, a leachate collection system, and two feet of soil with permeabilities less than $1x10^{-7}$ cm/sec. Construction under the 1992 permit began with lining of the canyon floor. Construction continues on alternating sides of the canyon walls. The additional expansion covered under this permit revision provides nine additional acres to the landfill footprint along the western ridgeline and a seven acre landfill boundary line adjustment along the eastern perimeter.

6. The Regional Board adopted Waste Discharge Requirements (WDR) for the Corinda Los Trancos Landfill on July 15, 1992, Order No. 92-087, and also adopted a National Pollutant Discharge Elimination System (NPDES) Permit No. 93-146 (CA0029947) on November 19, 1993. This Order rescinds Order No. 92-087 only.

WASTES AND THEIR CLASSIFICATION

7. The Corinda Los Trancos Landfill receives non-hazardous, municipal solid waste, including household wastes, construction debris, sewage sludge, autoclaved medical waste, and demolition wastes. The landfill also receives green waste, treated auto shredder waste, and cleanfill materials that are diverted for use on-site as alternative daily cover. Corinda Los Trancos Landfill also receives petroleum-contaminated soils with concentrations below or at specified limits. The landfill's current permitted capacity is 37.9 million cubic yards. Design modifications contained within this order would increase capacity to approximately 48.3 million cubic yards.

GEOLOGY

8. The surface and subsurface geology at the site has been evaluated based on field mapping, literature review, a seismic refraction survey, and review of the geologic logs for over 80 borings (totaling greater than 4000 linear feet of drilling). Based on this evaluation, the stratigraphy and structure of the site are summarized in Findings 10 and 11 below.

9. **Setting** - The Corinda Los Trancos Landfill is located in the Coast Range geomorphic province, on the peninsula west of San Francisco Bay. The landfill is situated in the Corinda Los Trancos Canyon which is a tributary drainage to Pilarcitos Creek that drains westward to the Pacific Ocean through Half Moon Bay. The Corinda Los Trancos drainage also serves as a recharge zone for groundwater in the coastal terrace aquifers used for domestic and agricultural supply in the area.

10. **Stratigraphy** - The current permitted footprint as well as the expansion area are underlain by granitic rocks, alluvial and colluvial deposits, and landslide and debris flow deposits. The primary geologic units at the site are as follows:

    Alluvial Stream Deposits (Qal) consist of poorly- to well- graded gravel, sand, silt, and clay. These deposits range from a few feet thick in the narrow side valleys to approximately 100 feet thick in the central portion of the Corinda Los Trancos drainage. The alluvial deposits underlying the canyon floor are susceptible to liquefaction and have been the subject of a ground improvement program completed in 1992 (See Finding 17).

    Uncemented Colluvial Deposits (Qc) mantle most of the slopes at the site. These deposits accumulated by slow movement of soil and weathered rock debris and consist of poorly graded to well graded cobbles, gravel, sand, silt and clay.

    Fan Deposits (Qf) form broad cone-shaped fans at the confluence of steep ravines and alluviated valley floors. These deposits consist of poorly graded to well graded cobbles, gravel, sand, silt, and lesser amounts of clay than the alluvial deposits.

    Landslide deposits (Qls) include shallow translational / rotational earthflows, translational block-slides, and rotational slumps. None of the observed landslides are considered active. However, the landslides may reactivate if subjected to heavy rains, seismic shaking, or undercutting during excavation. The slope stability analyses are discussed in Findings 24, 25, and 26, below.

    Granitic Rocks of Montara Mountains (Kgr) underlie the surficial deposits at the site. This formation is subdivided into three weathering profiles. From the surface down they are: (1) deeply weathered bedrock (Kgr1), (2) moderately weathered bedrock (Kgr2), and (3) slightly weathered to fresh bedrock (Kgr3). The combined thickness of the deeply and moderately weathered bedrock is generally less than 30 feet beneath the center of the valley. (EMCON, 1997a).

11. **Structure** - The primary structural elements evaluated in the alternative liner design and in the landfill expansion area were Holocene faults and shear zones. Holocene active faults are those which show evidence of displacement in the past 11,000 years. There are no known Holocene active faults within the

limits of the proposed landfill expansion. The closest known Holocene fault is the San Andreas Fault, located approximately 3 miles northeast of the site. The discharger has conducted analyses to evaluate the potential for seismic damage to the waste containment structure (See Finding Nos. 25 and 26).

Shear zones are defined as fractures that show evidence of minor displacement and generally contain pulverized material along their surfaces. Several shear zones have been mapped in cut slopes and through borings at the site, both within the permitted facility as well as in the expansion area. Since surficial deposits exposed in the cut slopes are not displaced, the shear zones were not considered active faults.

SURFACE WATER AND GROUNDWATER

12. **Surface water** - The Corinda Los Trancos Basin encompasses 572 acres within the lower portion of the 7,590 acre Pilarcitos Creek Basin. The entire landfill site drains into the Corinda Los Trancos Creek, which drains south into the west-flowing Pilarcitos Creek. The total watershed contributing to lower Pilaracitos Creek is approximately 7,590 acres, of which Corinda Los Trancos Canyon represents 7.5 percent. In 1984, Corinda Los Trancos Creek was routed around the perimeter of the existing landfill into a settling pond, which discharges back into the natural creek drainage down canyon of the landfill. Prior to the diversion, the creek flowed through a culvert beneath the refuse. Groundwater still collects in the old culvert beneath the original landfill, and is currently treated and discharged to a clay lined sedimentation basin and then discharged to Corinda Los Trancos Creek. Corinda Los Trancos Creek is characterized as an intermittent stream on the upper tributary area, and perennial stream in the lower tributary area. Evaluation of flows for the water shed area of the landfill indicates that post project flows will be essentially the same as the pre-project flows (EMCON, 1997a).

13. The mean annual precipitation for the site was calculated to be 36.27 inches based on extrapolating data from weather station locations at the San Francisco Airport and Half Moon Bay. The 100 year, 24-hour storm event was estimated to be 8.18 inches and the probable maximum precipitation, 15.7 inches. The mean annual evaporation was estimated to be 41.08 inches. Rainfall amounts have been in excess of 70 inches during El Nino rain years.

14. **Groundwater** - Based on hydraulic properties, the four major water-bearing units identified at the site (refer to Finding 10) can be grouped into two hydraulically connected hydrostratigraphic units. The upper hydrostratigraphic unit includes the alluvial and colluvial deposits (Qal and Qc), the deeply weathered bedrock (Kgr1), and the moderately weathered bedrock (Kgr2). The results of aquifer tests indicate that these materials within the canyon floor all responded as a single hydraulically connected unit. This upper hydrostratigraphic unit transmits enough water to be considered an aquifer. The lower hydrostratigraphic unit, composed of slightly weathered to fresh bedrock (Kgr3), is not considered an aquifer, although, this unit may serve as a significant recharge source area and may contribute groundwater to regional aquifers. Vertical hydraulic gradients between the upper and lower hydrostratigraphic units vary throughout the canyon.

The hydraulic conductivity of the upper hydrostratigrahic unit ranges from 3.8×10^{-4} to 13.8×10^{-6} cm/sec based on pump test data. The transmissivity of the upper hydrostratigrahic unit ranges from 880 to 1500 gallons per day per foot.

The hydraulic conductivity of the lower hydrostratigrahic unit ranges from 8.0×10^{-7} to 1.0×10^{-4} cm/sec based on packer test data (most values ranged from 1.1×10^{-6} to 8.4×10^{-6} cm/sec). During the wet season, groundwater rises to within a few feet of the ground surface along the canyon floor. Depth to groundwater along the ridge tops is roughly 85 feet, however, seasonal fluctuations of 20 feet are observed. Seep and spring discharges, varying in discharge volume from localized wet spots to a few tenths of a gallon per minute, exist along the side slopes of the canyon walls.

15. **Groundwater Flow** - The average groundwater flow gradient in the Corinda Los Trancos canyon ranges from 0.10 ft/ft to 0.35 ft/ft. Gradients are higher along the canyon walls and shallowest in the canyon floor. The average linear groundwater flow velocity in the canyon bottom is estimated at 120 feet/year (ft/yr) and along the east and west canyon walls at 3,300 and 2,600 ft/yr, respectively. All groundwater flow calculations are for the upper hydrostratigraphic unit only (EMCON, 1997a).

16. **Groundwater Recharge** - As landfill liner is placed higher along the canyon walls, recharge to the groundwater divides that separates this drainage from the adjacent canyons will be reduced. Groundwater modeling completed for the discharger's ROWD (EMCON, 1997a) indicates that under prolonged drought conditions, the groundwater divide between Corinda Los Trancos, Digges and Apanolio Canyons might cease to exist in the vicinity of the westside expansion because of reduced infiltration. Under these conditions, groundwater originating in the Corinda Los Trancos drainage would potentially migrate into the Apanolio groundwater basin.

17. **Groundwater Degradation** - Groundwater beneath the old existing and the Subtitle D lined landfill area is degraded by the old existing landfill. However, little significant degradation has been detected during quarterly groundwater monitoring since October 1990. Historical groundwater monitoring data shows TDS as high as 1600 mg/l and chloride as high as 780 mg/l. In addition, volatile organic compounds were detected sporadically at levels up to 1000 ppb of acetone in 1987 and 72 ppb of toluene in 1990. A new toe berm and grout curtain cutoff wall were constructed in 1990 to provide leachate control measures needed for eventual final closure of the old existing landfill. During 1997, no VOCs were detected in monitoring wells at the site, with the exception of one VOC which has not been detected in subsequent sampling rounds. Subdrain sampling point GD-2 has low concentration VOC detections and has been connected to the groundwater treatment system. Generally, it appears that the containment structures are acting to contain onsite groundwater degradation (EMCON, 1997b,c,d).

18. **Background water quality** – Surface and groundwater from most of the sampling locations in Corinda Los Trancos Canyon have a pH ranging between 6.5 and 8 and a TDS less than 500 parts-per-million.

19. **Groundwater Separation** – Increased pore pressure in the saturated zone, caused by loading from the landfill mass, creates elevated groundwater levels beneath the liner system in the canyon bottom. Under these conditions, the site would not meet the requirement for a minimum 5-foot separation between waste and groundwater as specified in Section 20240 of Title 27. As an engineered alternative, the Subtitle D lined portion has a groundwater subdrain beneath the liner system, designed to remove groundwater prior to its impacting the overlying liner and contacting waste. The old existing landfill was constructed prior to the promulgation of these requirements.

20. **Basin Plan** - The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) in June 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resource Control Board and the Office of the Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

21. **Beneficial Uses** - The beneficial uses of the groundwater in the vicinity of the site include municipal, domestic and agricultural uses. The beneficial uses of Corinda Los Trancos and Pilarcitos Creeks are as follows:

- Agricultural supply;
- Groundwater recharge;
- Fish migration and spawning;
- Municipal and domestic supply;
- Preservation of rare and endangered species;
- Water contact recreation;
- Non-contact water recreation;
- Warm freshwater habitat;
- Wildlife habitat; and
- Cold freshwater habitat

CHANGES TO WASTE MANAGEMENT UNIT LINER DESIGN

22. **Current Permitted Liner Design** – As the Corinda Los Trancos Landfill expands up the canyon walls, liner is constructed in accordance with the design approved under WDR Permit No. 92-087. This liner system consists of a subdrain, overlain by two feet of clay with a permeability of less than 1×10^{-7} cm/sec, an 80-mil thick High Density Polyethylene (HDPE) plastic geomembrane, a leachate recovery system, and a protective operations layer.

23. **Liner Design Changes** – The discharger conducted static and seismic stability analysis for numerous Geosynthetic Clay Liners (GCLs). Varying loads and compositions in both laboratory shear stress analyses and modeling were used to determine the appropriate composition for a GCL. Site specific information was also utilized during testing. Stability results indicated that a GCL comprised of an 80-mil HDPE textured geomembrane over a GCL, over a 40-mil HDPE textured geomembrane moisture barrier sheet will provide the required stability. Each GCL panel will be encapsulated by welding the edges of the two HDPE sheets together. Each panel will be placed long axis down slope, welded and overlapped. Encapsulating each GCL panel isolates any potential leaks, limiting the extent of clay saturation, which significantly decreases the shear strength of the GCL (figure 4). This composite design will be substituted for the 80-mil HDPE and the two feet of clay on the side slopes only, at final waste depths at or above 150 feet. Intermediate benches at or above this 150 foot final waste depth will be lined with the two feet of clay having a permeability less than $1x\ 10^{-6}$ cm/sec overlain by an 80-mil thick HDPE sheet.

24. An additional, unanchored geotextile will be included on perimeter side slopes to create a free moving failure surface to account for waste settlement. This sheet allows waste decomposition subsidence within the landfill to occur without shifting stress into the liner system, as this sheet would move rather than the underlying liner.

25. **Groundwater Subdrain** – The groundwater subdrain will be continued beneath the liner system at locations that groundwater is evidenced in historic or present springs and seeps. Specification B.4 defines requirements for groundwater subdrain beneath the GCL and specific criteria for discontinuing the groundwater subdrain system will be detailed by the discharger as required in Provision C.9.

26. **Leachate Collection and Recovery System** – The Leachate Collection and Recovery System (LCRS) will be placed above each of the above detailed liner systems throughout all future landfill liner construction phases. A combined drainage layer/ operations layer with a minimum thickness of two feet will be placed above the GCL sideslope liner. Perforated HDPE drain lines in addition to the drainage layer will be installed above the bench liner design and connected to the existing LCRS. Slopes will be designed to optimize the extraction of leachate from on top of the liner.

WESTSIDE EXPANSION AREA

27. Section 20705 of Title 27, requires the discharger to provide suitable materials for intermediate and daily cover. The discharger is proposing to excavate 29.4 acres of the upper western ridge, located between the headwaters of the Apanolio and Corinda Los Trancos canyons, for use as intermediate and daily cover. The excavation will increase the footprint of the landfill by nine acres and would provide additional material to reduce or eliminate the need for trucking in large quantities of soil for cover purposes.

28. The proposed westside excavation and expansion will have minor impacts on Apanolio Canyon. All surface runoff from the westside excavation and expansion, normally tributary to Apanolio Canyon, will be directed the landfill's sedimentation basin in Corinda Los Trancos Canyon. This may potentially reduce wet season flow to Apanolio Creek and groundwater infiltration into Apanolio Canyon basin.

29. Placing landfill liner over the slope in the westside expansion area will significantly decrease infiltration along the western ridge as described in Finding 16. The final design for the lined westside expansion area shall allow for sufficient natural recharge to occur. This will ensure that the groundwater divide between Digges, Corinda Los Trancos, and Apanolio canyons is maintained.

LINER STABILITY ANALYSIS

30. As part of the geotechnical evaluation and design of the combined liner system, the discharger evaluated the static and seismic stability of the permanently exposed cut slopes, the toe berm, and the final landfill slopes. As a part of the Subtitle D lined landfill expansion that began in 1993, the discharger implemented a ground improvement program intended to mitigate the potential for liquefaction.

31. **Alternative Liner Analysis** – Extensive interface strength testing was conducted in the ROWD (EMCON,1997a) using numerous different liner combinations to evaluate performance under anticipated site conditions. Test results indicate that hydration of the GCL significantly reduces liner strength. The following steps will be implemented by the discharger to prevent GCL hydration:

    - A subdrain will be installed beneath the GCL composite liner at and surrounding areas that exhibit groundwater seeps and springs. Specific criteria for the discontinuance of the groundwater subdrain will be delineated in the submittal outlined in Provision C.9;
    - Construction Quality Assurance (CQA) for subgrade preparation must eliminate any objects capable of penetrating the 40-mil HDPE bottom sheet;
    - Encapsulation (seaming of all four sides), of the each GCL sheet will significantly reduce the spread of any moisture front as seen in figure 4.

32. **Stability Analysis - Liquefaction** – Stability investigations indicated that saturated sandy deposits underlying the Subtitle D lined portion of the canyon floor would have a high susceptibility to liquefaction during the maximum probable earthquake (magnitude 8.25). The discharger mitigated these conditions through a Vibro-Replacement (Stone Column) technique that was determined, through pilot studies, to be effective at improving the stability of alluvial soils underlying this portion of the site, significantly reducing the likelihood of liquefaction.

MONITORING PROGRAMS

33. **Groundwater Monitoring** – Currently, the upper hydrostratigraphic unit is monitored at the site by 15 well and 2 subdrains. The independent subdrains collect groundwater from beneath the old existing landfill and the Subtitle D lined landfill. The monitoring wells are screened in the upper hydrostratigraphic unit because of the higher hydraulic conductivities in this zone. The monitoring well network consists of three upgradient wells (G-4B, G-4C, and MW-7) screened in the weathered granitic bedrock (Kgr1/Kgr2), and 12 downgradient wells screened in weathered bedrock (MW-6F, MW-8, MW-9, MW-10, MW-11B, and MW-12) or alluvium (MW-6A through 6E, MW-11A). From 1993 to 1996, the monitoring wells were monitored quarterly for general monitoring parameters that include volatile organic compounds (VOCs) including MTBE, semi-volatile organic compounds (SVOCs), 17 metals, cyanide, sulfide, chloride, sulfate, Total Dissolved Solids (TDS), eH, nitrogen, electrical conductivity (EC), and pH. In 1997 Board staff approved the current changes in the discharge monitoring program. A more extensive list of compounds, the Constituents of Concern (COC), is analyzed for once every five years; the next COC monitoring event is scheduled for the year 1999. The updated groundwater program is detailed in the Discharge Monitoring Plan attached to this Order (Attachment A).

34. **Leachate Monitoring** – Changes to the leachate monitoring program are detailed in the Discharge Monitoring Program attached to this Order (Attachment A).

35. **Surface Water Monitoring** - Surface water is currently monitored at six locations under NPDES Permit No. 93-146 (CA0029947) and will not change under this revision. The surface water monitoring program is detailed in the Discharge Monitoring Program attached to this Order (Attachment A).

36. **Vadose Zone Monitoring** - Vadose zone monitoring, as required by Section 20415 (Title 27), is not technically feasible at this site. Groundwater is currently in contact with the subdrain, effectively eliminating the vadose zone.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

37. San Mateo County adopted a Negative Declaration document that was certified complete on March 24, 1999 for the 9-acre westside expansion area and 7-acre eastside perimeter adjustment. The Negative Declaration finds that, on the basis of the initial study and comments received, that there is no substantial evidence that the project, following implementation of the mitigation measures contained in the Negative Declaration, will have a significant effect on the environment.

38. **Impacts to water quality outlined in the Negative Declaration:**

- Erosion of sediment into nearby Corinda Los Trancos and Pilarcitos Creeks.
- Groundwater impacts from waste disposal operations.

39. **Measures to mitigate to impacts outlined in the Negative Declaration:**

- The discharger is required to submit a technical report detailing the expansion of the sedimentation basin to reduce discharge of sediment into Corinda Los Trancos Creek. This measure is a requirement contained under Specification C15 of this Order.
- The design and special study requirements of this Order are expected to prevent contaminant discharges to groundwater.

40. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharger and has provided them with an opportunity for a public meeting and an opportunity to submit their written views and recommendations.

41. The Board, in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Browning-Ferris Industries of California, Inc., their agents, successors and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

A. PROHIBITIONS

1. Waste **shall not** be placed in or allowed to contact ponded water from any source whatsoever.

2. Waste **shall not** be disposed of in any position where they can be carried from the disposal site and discharged into water of the State or United States.

3. Leachate from waste and ponded water containing leachate or in contact with solid wastes **shall not** be discharged to waters of the State or of the United States.

4. Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). (H & SC Section 5411, CWC Section 13263)

5. Hazardous and designated wastes as defined in Section 2521 (Chapter 15) and Section 20210 (Title 27), except for waste that is hazardous due only to its friable asbestos content, **shall not** be deposited, disposed of, or stored at this site.

6. High moisture content wastes (including restaurant grease) containing less than 50% solids, **shall not** be deposited, disposed of, or stored at this site, except as provided in the approved sludge management plan. Wastes containing at least 50% solids and defined by Section 20220 (Title 27) as non-hazardous solid waste may be disposed of at this site.

7. The discharge of waste that has the potential to reduce or impair the integrity of the containment structures or which, if co-mingled with other wastes in the unit, could produce chemical reactions that create heat or pressure, fire, explosion, toxic by-products, or reaction products, which in turn:

   - Require a higher level of containment than provided by the waste management unit;
   - Are "Restricted Hazardous Wastes"; or
   - Impair the integrity of the containment structures is expressly prohibited.

8. Construction of the containment features of all future phases must be in compliance with this Order and Title 27. Wastes **shall not** be placed in any portion of a newly constructed phase until the Executive Officer receives and approves the written certification and supporting Construction Quality Assurance (CQA) documentation. All reports must be prepared by and signed by a California registered civil engineer or certified engineering geologist. that the containment structures have been constructed in accordance with those design plans.

9. The discharger, or any future owner or operator of the site, **shall not** cause the following conditions to exist in waters of the State at any place outside the waste management facility:

   a. Surface Waters

      1. Floating, suspended, or deposited macroscopic particulate matter or foam;
      2. Bottom deposits or aquatic growths;
      3. Alteration of temperature, turbidity, or apparent color beyond natural background levels;
      4. Visible, floating, suspended or deposited oil or other products of petroleum origin; and
      5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

1. Groundwater shall not be impacted as a result of solid waste degradation.

B. SPECIFICATIONS

1. All reports pursuant to this order shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.

2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.

3. Water used during disposal operations shall be limited to dust control, fire suppression and earthfill moisture conditioning.

4. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site. Surface drainage from tributary areas, and internal site drainage from surface sources, shall be collected into a sedimentation basin. The discharge of impounded water shall be subject to an NPDES permit issued separately by this Board. Surface drainage ditches shall be constructed to ensure that all rainwater is diverted away from the disposal area and into the impoundment. In addition, groundwater occurring under waste shall be collected by an "underdrain system" and diverted to the groundwater treatment system and then discharged to the sedimentation basin except as necessary for pond maintenance as permitted by a NPDES permit.

5. Hazardous wastes, designated wastes, excluding petroleum contaminated soils and infectious wastes shall not be disposed of at this landfill. Non-hazardous, inert wastes and asbestos may be disposed of at this landfill provided that all regulations and provisions of the California Integrated Waste Management Board, California Department of Toxic Substance Control, local health agencies and County Land Use Permit requirements are complied with.

6. The discharger shall design, install and operate a blanket-type leachate collection and removal system for the base and sidewall portions of the landfill liner, such that no more than 1 foot of hydraulic head remains on any portion of the liner. The leachate collection and recovery system shall be designed and operated to function without clogging, (Sect. 20340 [Title 27]), and inspected quarterly for excess fluid. The design shall be equipped with accessible clean-outs for the lateral drain(s).

7. Landfill leachate shall continue to be discharged to an above ground, secondarily contained, enclosed tank. Recirculation of leachate and landfill gas condensate shall be limited to areas of the landfill equipped with a composite liner and leachate collection and recovery system.

8. Three different composite liner designs shall be used at the Corinda Los Trancos Landfill. The components of each liner are shown in Figure 3 and use restrictions within the landfill are as follows:

- Design One is the existing liner, utilized in the canyon bottom. This design is comprised of 80-mil HDPE underlain by 2 feet of clay with a maximum permeability of 10^{-7} cm/sec and permitted for use as liner throughout the landfill;
- Design Two is comprised of a GCL sandwiched between an 80-mil HDPE liner and a 40-mil HDPE liner. The two HDPE sheets are seamed together every 60 feet in width or at the end of the days production (whichever is less) such that each panel is isolated from potential leaks in adjacent panels. GCL sheets shall be overlapped a minimum of one foot. Design Two is permitted for use on landfill side slopes at locations where height of garbage over side slopes does not exceed 150 feet; and
- Design Three is comprised of 80-mil HDPE underlain by 2 feet of clay with a maximum permeability of 1×10^{-6} cm/sec and permitted for use as liner on benches, where waste depths do not exceed 150 feet.

9. The groundwater subdrain beneath the GCL liner system shall be continuous at an elevation that is equal to one half of the total waste thickness of the landfill. Above that elevation, the groundwater subdrain shall be included as conditions require due to localized groundwater seeps and springs. Criteria for discontinuing the groundwater subdrain shall be detailed in Provision C.9.

10. The landfill shall be designed and constructed in conformance with Title 27 and this Order. The final design plans shall be submitted to the Executive Officer for review and approval and shall include, but not be limited to, the engineered design plans for the fill cell, construction specifications, and a construction quality assurance plan. Each final construction report shall include, but not be limited to, construction record drawings (as-built drawings) for the waste management unit, a CQA report with a written summary of the CQA program and all test results and analyses, and a certification as described in Specification B.1.

11. The existing facility containment, drainage, and monitoring systems shall be maintained as long as leachate is present and poses a threat to water quality.

12. The discharger shall assure that the foundation of the site, the solid waste fill, and the structures which control leachate, surface drainage, erosion and gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

13. The final cover system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will have a minimum slope of three percent plus an allowance for subsidence. The final cover system shall meet all other applicable requirements as described in Title 27.

14. The discharger shall analyze the samples from the existing groundwater wells as outlined in the Discharge Monitoring Program (Attachment A).

15. The discharger shall operate the waste management facility so as to prevent a statistically significant difference from existing in the concentrations of indicator parameters or waste constituents in waters passing through the point of compliance, as defined in Section 20390, Title 27. The discharger shall operate the waste management facility so as to not exceed the "Water Quality Protection Standard" (WQPS), of the Discharge Monitoring Program.

16. In the event of a release of a constituent of concern beyond the Point of Compliance (Section 20405, Title 27), the site begins a Compliance Period (Section 20410, Title 27). During the Compliance Period, the discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program. The Point of Compliance is defined as the vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

17. Interim cover shall be maintained over all waste, at all times, except for the active face area of the disposal operations, or as provided for by the performance standards adopted by the California Integrated Waste Management Board.

18. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer. In addition, the discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption.

19. Methane and other landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water because of migration through the vadose zone.

20. The discharger shall maintain all devices or designed features installed in accordance with this Order, such that they continue to operate as intended without interruption as provided for by the performance standards adopted by the California Integrated Waste Management Board.

21. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a land surveyor or civil engineer registered by the State of California.

22. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and postclosure maintenance period.

23. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure, which threatens the integrity of containment features, or the landfill, shall be promptly corrected after approval of the method and schedule by the Executive Officer.

24. The discharger shall notify the Regional Board at least 180 days prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.

25. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has been closed according to the requirements of this Order and Title 27. The discharger shall certify under penalty of perjury that all closure activities were

performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations.

26. The discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer.

2. The discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350).

3. The discharger shall submit annual monitoring reports by January 31 of each year in accordance with the attached Updated Discharge Monitoring Program (Attachment A). Sample collection shall be conducted at locations and frequencies specified in the Updated Discharge Monitoring Plan. The annual report to the Board **shall** cover the previous calendar year as described in Part A of the Updated Discharge Monitoring Program. In addition to the requirements outlined in Attachment A, this report shall also include the following: location and operational condition of all leachate and groundwater monitoring wells; groundwater and leachate contours for each monitoring event; tabulation of monthly leachate volumes discharged to the wastewater district along with tabulated analytical results for these discharges; the existing gas extraction system (annual report only); and gas monitoring results (annual report only).

REPORT DUE DATE: ANNUAL REPORT - JANUARY 31 (EACH YEAR)

4. The discharger shall submit **Construction Plans and Drawings**, acceptable to the Executive Officer, prior to each new phase of liner construction at the site. These Plans shall include, but are not limited to, details of the liner(s) to be used, field and laboratory CQA procedures and testing frequencies, schedule of construction activities, and discussion of placement, working, and seaming procedures.

PLAN DUE DATE: 45 DAYS PRIOR TO BEGINNING CONSTRUCTION

5. The Discharger shall submit a **Five Year Development Plan** acceptable to the Executive Officer. This plan shall include, but not limited to, scaled drawings showing lined footprint expansion areas and grading locations for each year in the five year cycle. The Five Year Plan shall also include a schedule for submission of ROWD updates for significant changes to the existing permit. These Development Plans should be updated as they are changed or annually at a minimum.

REPORT DUE DATE: FIRST REPORT – JANUARY 21, 2000

6. The discharger shall submit a **Construction Certification Letter** (**CCL**) signed and stamped by a registered civil engineer, California registered geologist, or certified engineering geologist following completion of a newly constructed phase of the landfill. This letter shall certify that the new phase was constructed in compliance with this Order, the accepted design plans, and Title 27. The **CCL** shall be received by the Board prior to the acceptance of any waste into the newly lined area. A **Liner As-built Construction Report** acceptable to the Executive Officer, shall be submitted for each phase of landfill liner construction, with the **CCL**. This report shall include as-built drawings, construction quality assurance results with a written summary, and all test results and certification by the professional engineer or certified engineering geologist. The report shall also include update topographic maps of the facility.

CERTIFICATION LETTER DUE DATE:30 days prior to receipt of wastes into new area
CONSTRUCTION QUALITY
ASSURANCE REPORT: 30 days prior to receipt of wastes into new area

7. The discharger shall submit a **Final Cover Construction Plan** which shall include, but is not limited to, the following: a schedule for completion of all construction field activities; CQA testing frequencies for in-place soils and any borrow materials; waste consolidation plans and associated post-removal analyses; final cover design drawings; details of landfill gas and leachate well contingencies during cover construction; proposed final landfill gas and leachate well configuration with system changes.

PLAN DUE DATE: 180 days prior to anticipated receipt of last waste

8. The discharger shall submit a detailed **Updated Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive officer to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 6 or greater at or within 30 miles of the landfill. The report shall describe the containment features, and groundwater monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: APRIL 3, 2000

9. The discharger shall submit a **Subdrain System Decision Criteria Plan** acceptable to the Executive Officer. This letter plan/report shall include field observation criteria and rationale for areas where the groundwater subdrain should be discontinued beneath Design Two (GCL) and Design Three liner in the upper portions of the canyon walls. Additionally, rationale shall be included for calculation of extent of groundwater subdrain setback from last observed sidewall seep or spring. This rationale shall consider estimated peak flow/discharge conditions and necessary variations to be considered beneath GCL versus the conventional clay liner.

PLAN DUE DATE: 45 DAYS PRIOR TO CONSTRUCTION

10. The discharger shall submit a **Leachate Monitoring System Evaluation**. This plan shall include discussion and evaluation of leachate monitoring wells, collection sumps, effectiveness of the leachate

removal system, leachate contour levels (in the form of contour maps) as measured during the quarterly monitoring events, and an evaluation of the overall effectiveness of the leachate removal system in reducing leachate volumes within the landfill. Following the initial submittal, this discussion and evaluation will be performed on a yearly basis and included with the annual monitoring report.

REPORT DUE DATE: JANUARY 31, 2000
JANUARY 31 each year thereafter

11. The discharger shall submit a letter report to the Board detailing the repair and maintenance activities that need to be completed prior to the commencement of the following rainy season. This letter report shall also include a schedule for repair and maintenance activities, and cost analysis detailing the anticipated expense for all repairs, maintenance, and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the Discharge Monitoring Plan (Attachment A).

REPORT DUE DATE: July 31 yearly

12. The discharger shall submit a **Contingency Plan** to be instituted in the event of a surface leak or spill from the leachate facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board and the Local Enforcement Agency (LEA). The discharger shall initiate its contingency action plan to stop and contain the migration of pollutants to receiving waters.

REPORT DUE DATE: APRIL 3, 2000

13. The discharger shall file with the Regional Board Discharge Monitoring Reports performed according to any Discharge Monitoring Program issued by the Executive Officer.

14. Prior to construction of the Westside Expansion, the discharger shall submit a technical report, acceptable to the Executive Officer, that addresses the groundwater recharge concerns outlined in Findings 16 and 29 and which analyses alternatives to the proposed excavation of the western ridge that would satisfy the landfill's daily and interim cover needs without excavation.

    Specifically, the report shall provide construction design information, including groundwater modeling for the landfill, that ensures the groundwater divide between Digges, Apanolio and Corinda Los Trancos canyons is maintained. The report shall also analyze the feasibility of using alternative daily cover in lieu of excavating the ridge.

REPORT DUE DATE: SEPTEMBER 29, 2000

15. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

REPORT DUE DATE: IMMEDIATE

16. The discharger shall submit a technical report, acceptable to the Executive Officer, detailing a 15 acre-foot expansion of the existing sedimentation basin. This report shall include technical justifications that the design will detain excess runoff and sediments from the landfill and plans for the design and construction of the sedimentation basin expansion. Upon completion of the project the discharger shall submit a CQA report detailing the construction of the expansion.

EXPANSION REPORT DUE DATE: AUGUST 31, 2000
CQA REPORT DUE DATE: 30 days after completion of project

17. All reports pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.

18. The discharger shall maintain a copy of these waste discharge requirements and these requirements shall be available to operating personnel at the facility at all times (CWC Section 13263).

19. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems, which arise in the future, as a result of the waste discharged or related operations.

20. In the event that the discharger-owned property adjacent to the landfill is developed into residential dwellings, the discharger will notify perspective home purchasers of the presence of the landfill.

21. The discharger shall permit the Regional Board or its authorized representative, upon presentation of credentials:

    - Immediate entry upon the premises on which wastes are located or in which any required records are kept.
    - Access to copy any records required to be kept under the terms and conditions of this order.
    - Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this order or by any other California State Agency.
    - Sampling of any discharge or groundwater governed by this order.

22. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes.

23. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. The

discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgment that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on (CWC Sections 13267 and 13263). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board and statement. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

24. This Order is subject to Board review and updating.

25. Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information (CWC Sections 13260 and 13267).

26. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge [CWC Section 13263(g)].

27. Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of these requirements shall not be affected.

28. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order [CWC Section 13263(f)].

29. Reporting of Hazardous Substance Release: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00). A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified. This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

30. The discharger shall report any noncompliance which may endanger human health or the environment. Any such information shall be provided orally to the Executive officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five

days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].

31. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

32. All analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR, Part 1360) promulgated by the U.S. Environmental Protection Agency (CCR Title 23, Section 2230).

33. This Board's Order No. 92-087 is hereby rescinded.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 15, 1999.

Loretta K. Barsamian
Executive Officer

Figures: Figure 1 - Site Location Map
Figure 2 - Facility Map
Figure 3 - Liner Designs
Figure 4 – Downslope Seam Detail

Attachment: Attachment A - Discharge Monitoring Program

REFERENCES

EMCON, 1997a, Report of Waste Discharge, Corinda Los Trancos/Ox Mountain Landfill.

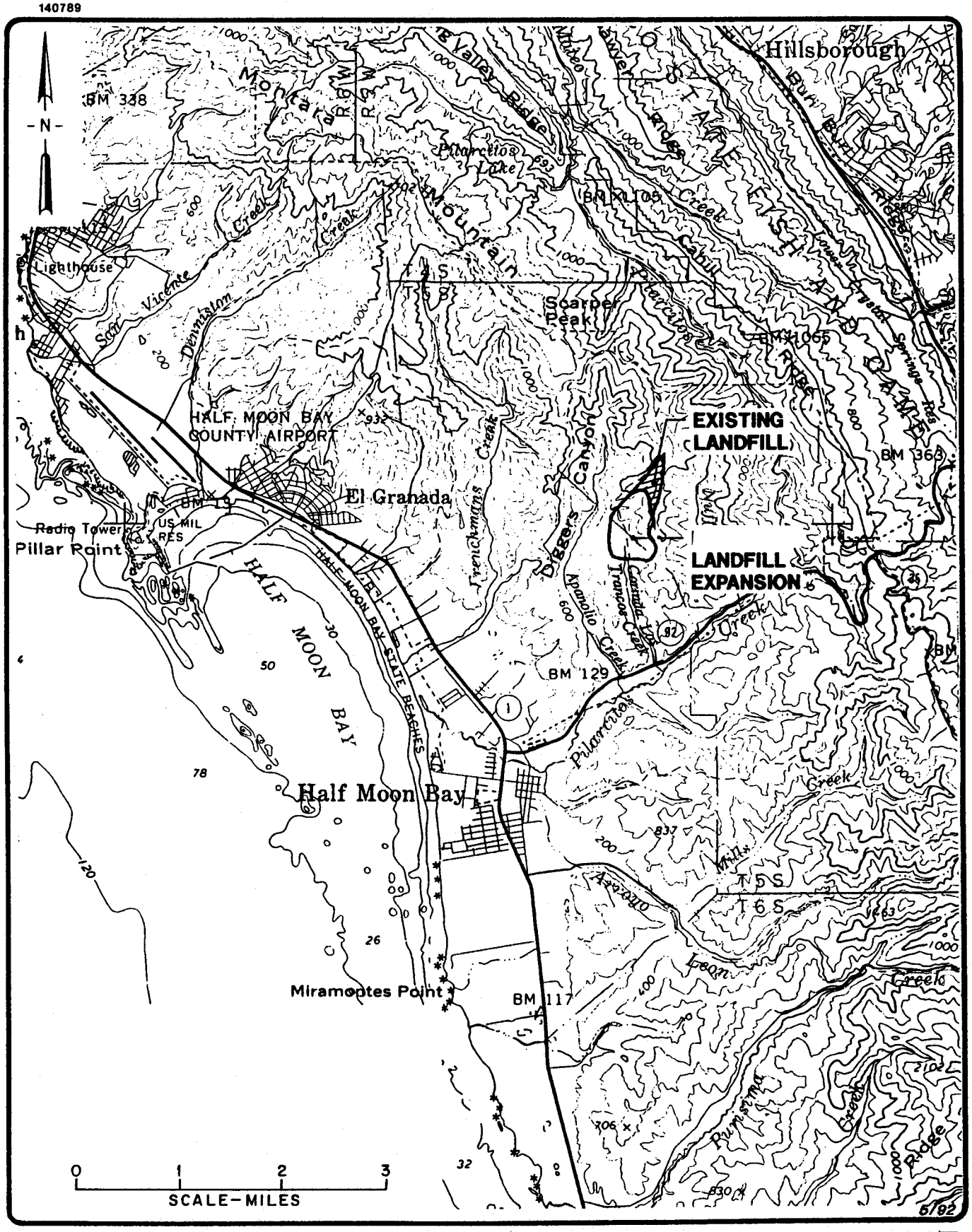
EMCON, 1997b, Third Quarter Self Monitoring Program, Corinda Los Trancos/Ox Mountain Landfill.

EMCON, 1997c, Second Quarter Self Monitoring Program, Corinda Los Trancos/Ox Mountain Landfill.

EMCON, 1997d, First Quarter Self Monitoring Program, Corinda Los Trancos/Ox Mountain Landfill.

EMCON, 1991, Report of Waste Discharge, Corinda Los Trancos/Ox Mountain Landfill.

140789



LOCATION MAP SHOWING PROPOSED EXPANSION OF
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH, SAN MATEO COUNTY

SAN FRANCISCO BAY REGIONAL
WATER QUALITY CONTROL BOARD

FIGURE
1

1" 1/2" 0" 1"

Dimscale: 400 Ltscale: 750 Psltscale: 0

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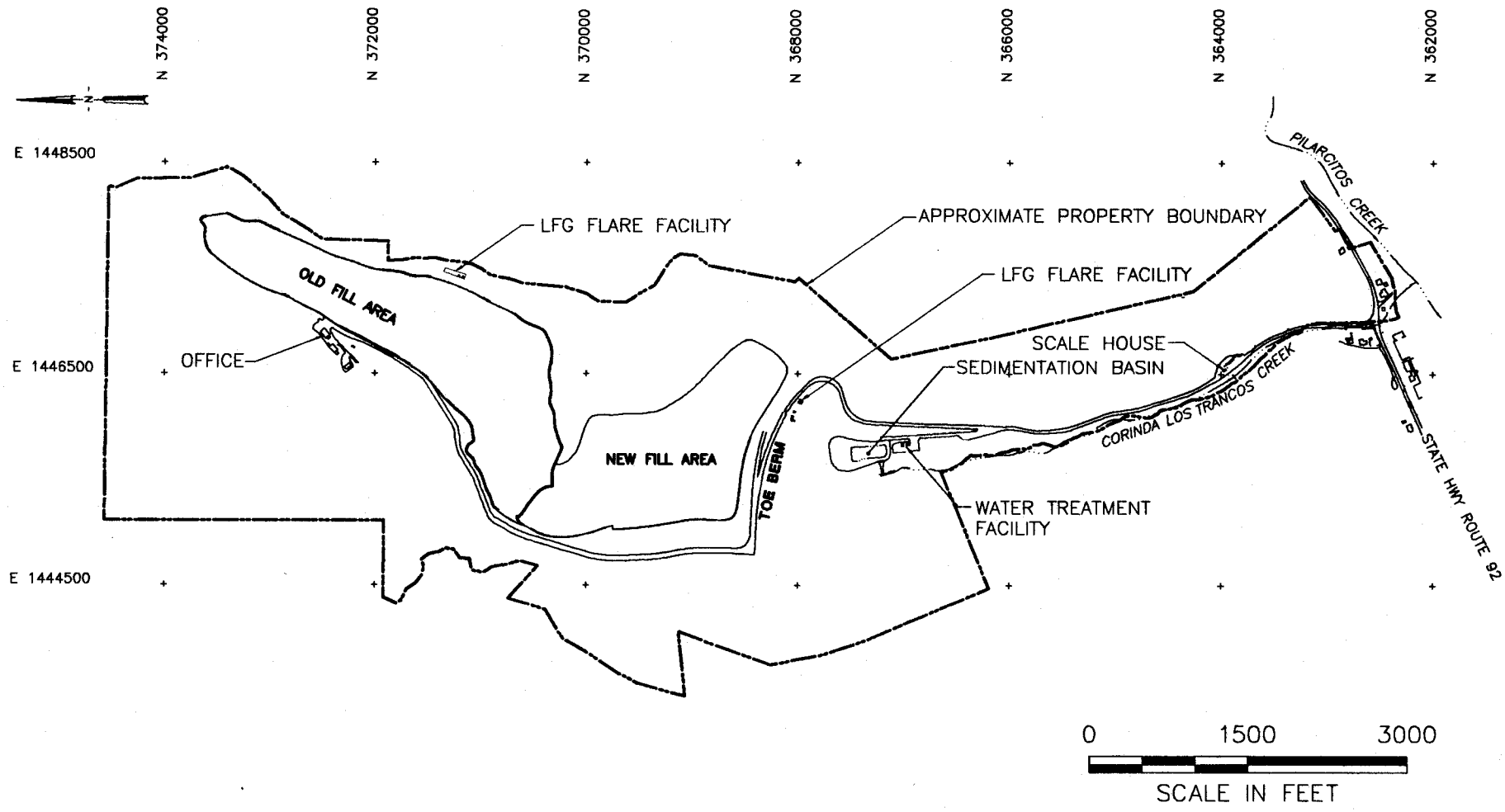
SANJOSE/CADD: N:\DWG\372-009\SJLAYOUT.DWG Fri, 22/Jan/99 10:45am ktroyer

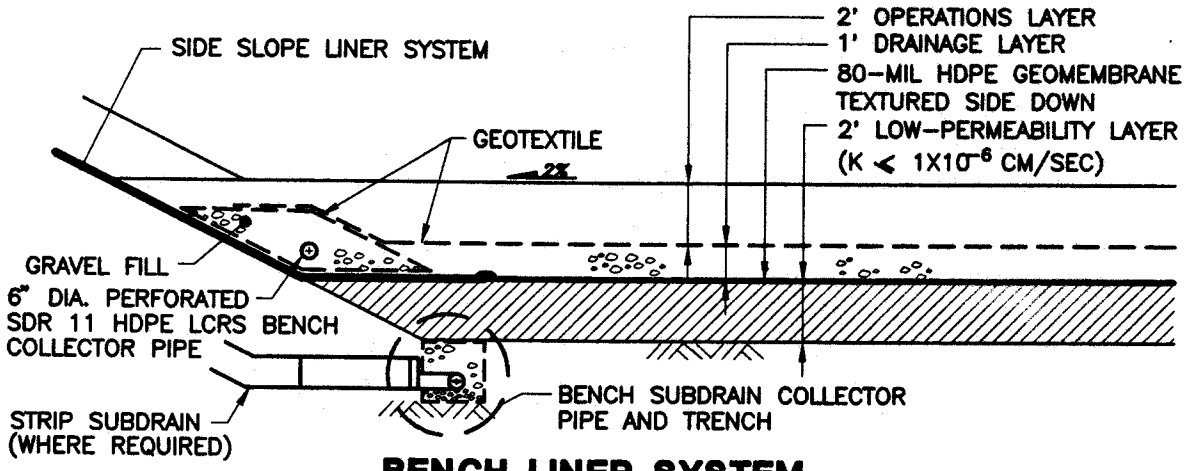


DATE JAN. 1999
DWN KLT
APP
REV
PROJECT NO.
372-009.073

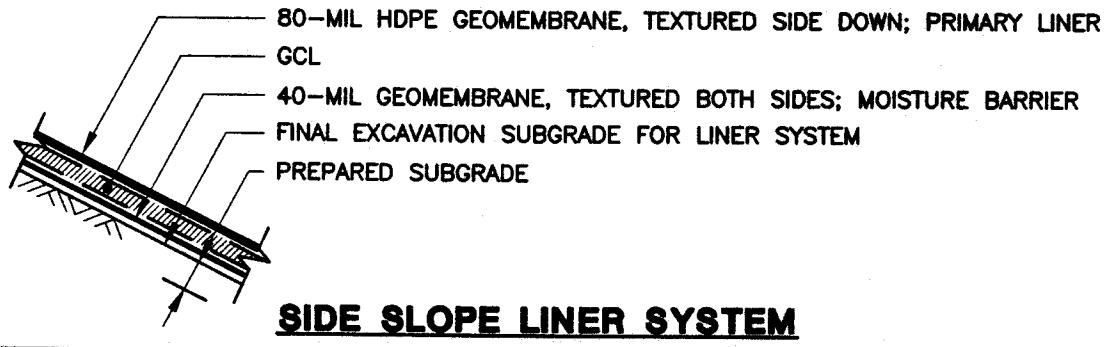
FIGURE 2

BROWNING-FERRIS INDUSTRIES OF CALIFORNIA
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH
SAN MATEO COUNTY, CALIFORNIA

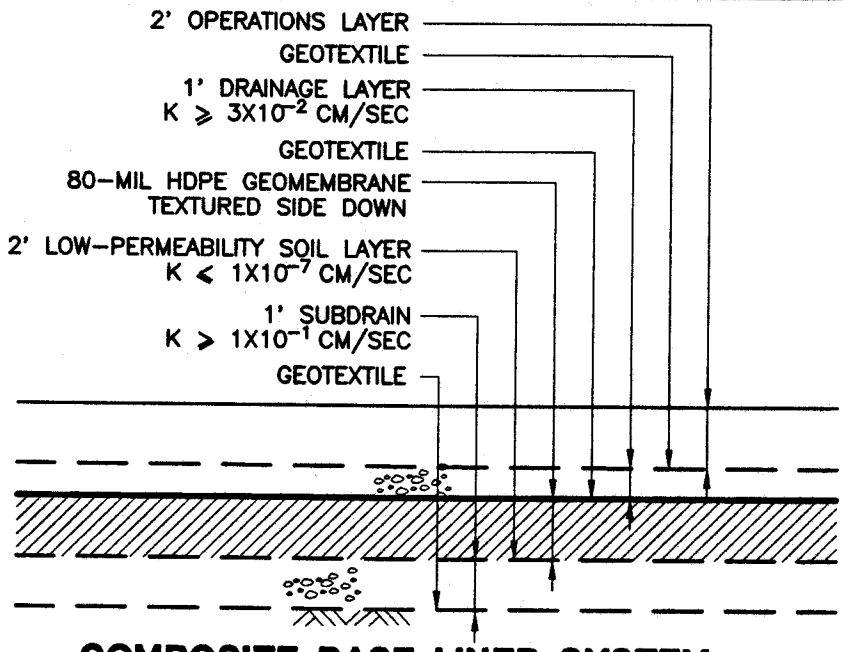
GENERAL SITE LAYOUT



BENCH LINER SYSTEM



SIDE SLOPE LINER SYSTEM



COMPOSITE BASE LINER SYSTEM

DATE 1/14/98
DWN RVW
APP
REV
PROJECT NO.

FIGURE 3
CORINDA LOS TRANCOS LANDFILL
SAN MATEO COUNTY, CALIFORNIA

LINER SYSTEMS

1" 1/2" 0" 1"

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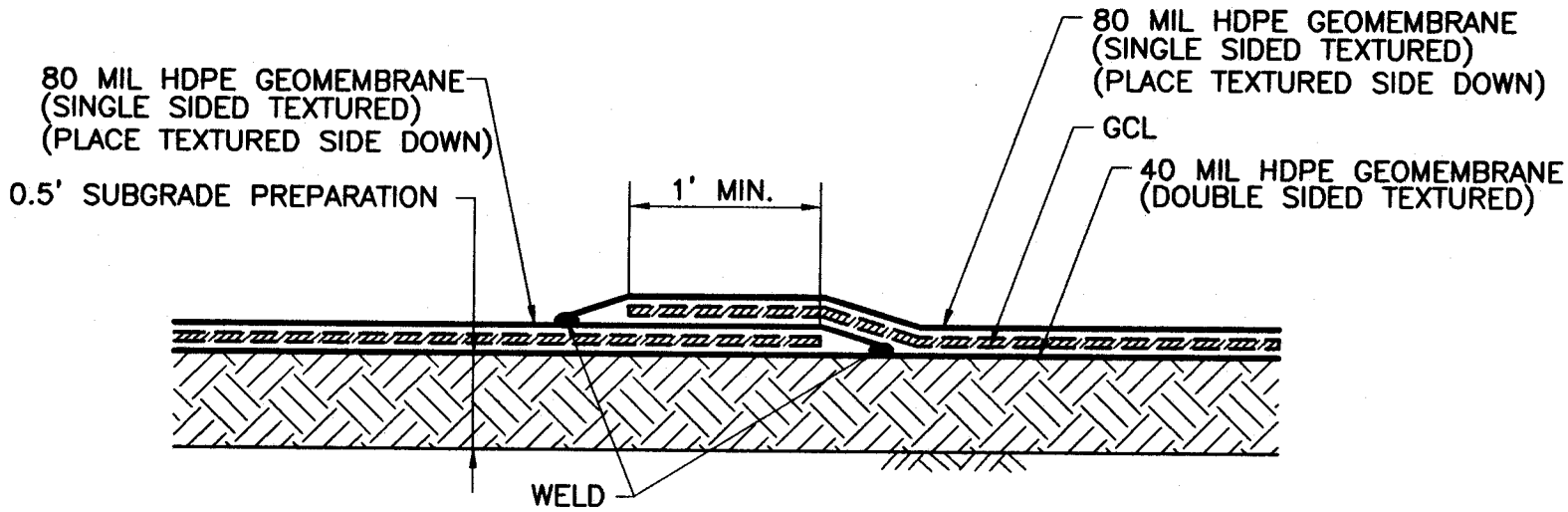

DOWNSLOPE SEAMING

DETAIL 1

N.T.S.

DATE 2/9/99
DWN R. WALL
APP
REV
PROJECT NO.
20372-022.100

FIGURE 4
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH
SAN MATEO COUNTY, CALIFORNIA
DOWNSLOPE COMPOSITE LINER SYSTEM SEAMING

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

BROWNING-FERRIS INDUSTRIES OF CALIFORNIA, INC.
CORINDA LOS TRANCOS
CLASS III SOLID WASTE DISPOSAL SITE

SAN MATEO COUNTY

ORDER NO. 99-067

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Provision C.3 of Regional Board Order No. 99-067.

The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of Title 27.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.

2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and Corinda Los Trancos Creek are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters

1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
2) Discoloration and turbidity: description of color, source, and size of affected area.

3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
4) Evidence of beneficial use: presence of water associated wildlife.
5) Flow rate.
6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

1) Evidence of ponded water at any point on the waste management facility.
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.
4) Standard Analysis (SA) and measurements are listed on Table A (attached)

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 20415 and
2. Surface water per Section 20415,

and per the general requirements specified in Section 20415 of Title 27.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.

2. Date and time of sampling.

3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.

5. Calculation of results.

6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 30th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below.

The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.

3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other

observations.

c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.

2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.

2. CONTINGENCY REPORTING

a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

1) a map showing the location(s) of discharge;
2) approximate flow rate;
3) nature of effects; i.e. all pertinent observations and analyses; and
4) corrective measures underway or proposed.

b. A report shall be made in writing to the Board within seven days of determining that a statistically significant difference occurred between a down gradient sample and a WQPS. Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and re-analyze.

c. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and WQPS(s) the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 20420 for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 20425 of Title 27.

d. Within 180 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 20430. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a $3\frac{1}{2}$" computer data disk, MS-EXCEL format, tabulating the year's data.

b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

c. A map showing the area, if any, in which filling has been completed during the previous calendar year.

d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

e. An evaluation of the effectiveness of the leachate monitoring/ control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. <u>WELL LOGS</u>

A boring log and a monitoring well construction log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department

of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING – **Observe Quarterly, Report Semi-Annually**

1. Record the total volume and weight of refuse in cubic yards and tons disposed of at the site during each month showing locations and dimensions on a sketch or map.
2. Record a description of waste stream to include percentage of waste type, ie., Residential, Commercial, Industrial or Construction debris.
3. Record location and aerial extent of disposal of each waste type.

B. ON-SITE OBSERVATIONS - **Observe Quarterly, Report Semi-Annually**

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-`n'	Located on the waste disposal area as deli-neated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 thru P-`n' (per-imeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Weekly

C. SURFACE, GROUNDWATER, AND LEACHATE MONITORING - **Report Semi-Annual**

i. **Surface and Stormwater:** Surface water monitoring shall be conducted at E-002 and E-Pond (Figure A-1) for the parameters, methods, and frequencies listed in Table A-1 and as specified under NPDES permit No. CA0029947 (RWQCB Order No. 93-146). Storm water monitoring shall be conducted as outlined in Table A-2. Results from storm water monitoring

and discharge of surface water runoff from retention basins shall be submitted as part of the annual report.

Table A-1
Surface Water Monitoring Parameters
Corinda Los Trancos/Ox Mountain Landfill

PARAMETERS	METHOD[1]	FREQUENCY[2]
Temperature	Field	Q/S
VOCs (including MTBE)	8260	Q/S
Total Desolved Solids	160.1	Q/S
Total Suspended Solids	160.2	Q/S
Turbidity	Field	Q/S
pH	Field	Q/S
Eh	Field	Q/S
Temperature	Field	Q/S
Color	Field	Q/S
Fish Bioassay (96 hour acute toxicity % survival)	N/A	S

1 Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Methods for Measuring Acute Toxicity of Effluent to Freshwater and Marine Organisms, USEPA 600/4-85/0133, April, 1985, 3rd edition.
2 Q/S = Quarterly for first year, semiannual thereafter.

Table A-2
Stormwater Monitoring Parameters
Corinda Los Trancos/Ox Mountain Landfill

PARAMETERS	METHOD[1]	FREQUENCY[2]
Total suspended solids	160.2	S
PH	Field	S
Electrical conductivity	Field	S
Oil and Grease	418.1	S
Fish Bioassay (96 hour acute toxicity % survival)	NA	S

1 Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Methods for Measuring Acute Toxicity of Effluent to Freshwater and Marine Organisms, USEPA 600/4-85/0133, April, 1985, 3rd edition.
2 S = Samples to be collected during two storm events between October and April.

ii. **Groundwater:** Groundwater samples shall be analyzed as detailed in Tables A-3 and A-4. Sample locations are shown in Figure A-1. The Discharger shall analyze for all Subtitle D, Appendix II compounds once every five years with the next sampling event scheduled for 1999.

Table A-3
Routine Monitoring Parameters for Groundwater
Corinda Los Trancos/Ox Mountain Landfill

PARAMETERS	METHOD[1]	FREQUENCY[2]	
		Toe-Berm Compliance Wells[3]	Other Points[4]
Chloride	300.0	Q	S
Sulfate	300.0	Q	S
Nitrate plus nitrite as nitrogen	300/354.1	Q	S
Total dissolved solids	160.1	Q	S
PH	field[5]	Q	S
Electrical conductivity	field	Q	S
Eh	field	Q	S
Turbidity	field	Q	S
Temperature	field	Q	S
Color	field	Q	S
			S
VOCs (including MTBE)			
standard USEPA method 8260 list[6]	8260	Q	S

1 Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPA SW-846, 3rd edition, November 1986 and revisions.
2 Q = Samples to be collected quarterly
S = Samples to be collected semiannually
3 Toe-berm compliance wells are MW-6A through MW-6F.
4 Other points are wells G-4C, MW-7 through MW-10, MW-11A, MW-11B, and MW-12, underdrain GD-2.
5 Field measured parameters not used for statistical water quality evaluation.
6 Includes the 47 VOCs in Subtitle D Appendix I and shall include MTBE.

Table A-4
Groundwater Constituents of Concern
Corinda Los Trancos/Ox Mountain Landfill

PARAMETER	METHOD[1]	FREQUENCY[2]
Cyanide	335.2	5Y
Sulfide	376.1	5Y
Total Metals		
Antimony	6010	5Y
Arsenic	7060	5Y
Barium	6010	5Y
Beryllium	6010	5Y
Cadmium	6010	5Y
Chromium	6010	5Y
Cobalt	6010	5Y
Copper	6010	5Y
Lead	7421	5Y
Mercury	7470	5Y
Nickel	6010	5Y
Selenium	7740	5Y
Silver	6010	5Y
Thallium	7841	5Y
Tin	6010	5Y
Vanadium	6010	5Y
Zinc	6010	5Y
Volatile Organic Compounds		
VOCs from Appendix II of 40 CFR Part 258, analyzed by USEPA method 8260 and shall include MTBE.	8260	5Y
Semivolatile Organic Compounds		
standard USEPA method 8270 list	8270	5Y
Organochlorine Pesticides and PCBs		
standard USEPA method 8080 list	8080	5Y
Chlorophenoxy Herbicides		
standard USEPA method 8150 list	8150	5Y

[1] Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPA SW-846, 3rd edition, November 1986 and revisions.

[2] Samples to be collected once every 5 years unless triggered by the release discovery response.

iii. **Leachate:** Leachate samples shall be analyzed as detailed in Table A-5. The Sample locations are leachate holding tanks LHT-1 and LHT-2. The Discharger shall analyze for all Subtitle D, Appendix II compounds once every five years with the next sampling event scheduled for 1999.

Table A-5
Leachate Monitoring Parameters
Corinda Los Trancos/Ox Mountain Landfill

PARAMETER	METHOD[1]	FREQUENCY[2]
Arsenic	206.2	5Y
Cadmium	200.7	5Y
Chromium	200.7	5Y
Copper	200.7	5Y
Lead	239.2	5Y
Mercury	245.1	5Y
Nickel	200.7	5Y
Silver	200.7	5Y
Zinc	200.7	5Y
Phenols	420.1	5Y
Cyanide	335.2	5Y
Polycyclic Aromatic Hydrocarbons	8100	5Y
Methylene Chloride	8260	5Y
Chloroform	8260	5Y
Perchloroethylene	8260	5Y
Benzene	8260	5Y
MTBE	8260	5Y
Carbon Tetrachloride	8260	5Y
Carbon Disulfide	8260	5Y
Tot. Petro Hydrocarbon Gasoline	DHS LUFT	5Y
Oil and Grease	418.1	5Y
pH	Field	5Y
Temperature	Field	5Y
Biochemical Oxygen Demand	405.1	5Y
Total Suspended Solids	160.2	5Y

D. FACILITIES MONITORING

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report quarterly. The facilities to be monitored shall include, but not be limited to:

a. Leachate Collection and Removal System
b. Surface water impoundment
c. Leachate handling facilities
d. Perimeter diversion channels
e. Leachate Management facilities and secondary containment.

E. REPORT DUE DATES

Reports shall be due on the following schedule:

First semi-annual report:	**July 31**
Second semi-annual report:	**January 31**
Annual Report:	**Combined With the Second Semi-Annual due January 31**

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 99-067.

2. Is effective on the date shown below.

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Loretta K. Barsamian
Executive Officer

Date Ordered: September 15, 1999

Attachment: Figure A-1 – Sample Location Map

EA-SANJOSE-CAD/DRAWINGS: G:\372-009\SJSITE.dwg Xrefs: <NONE>
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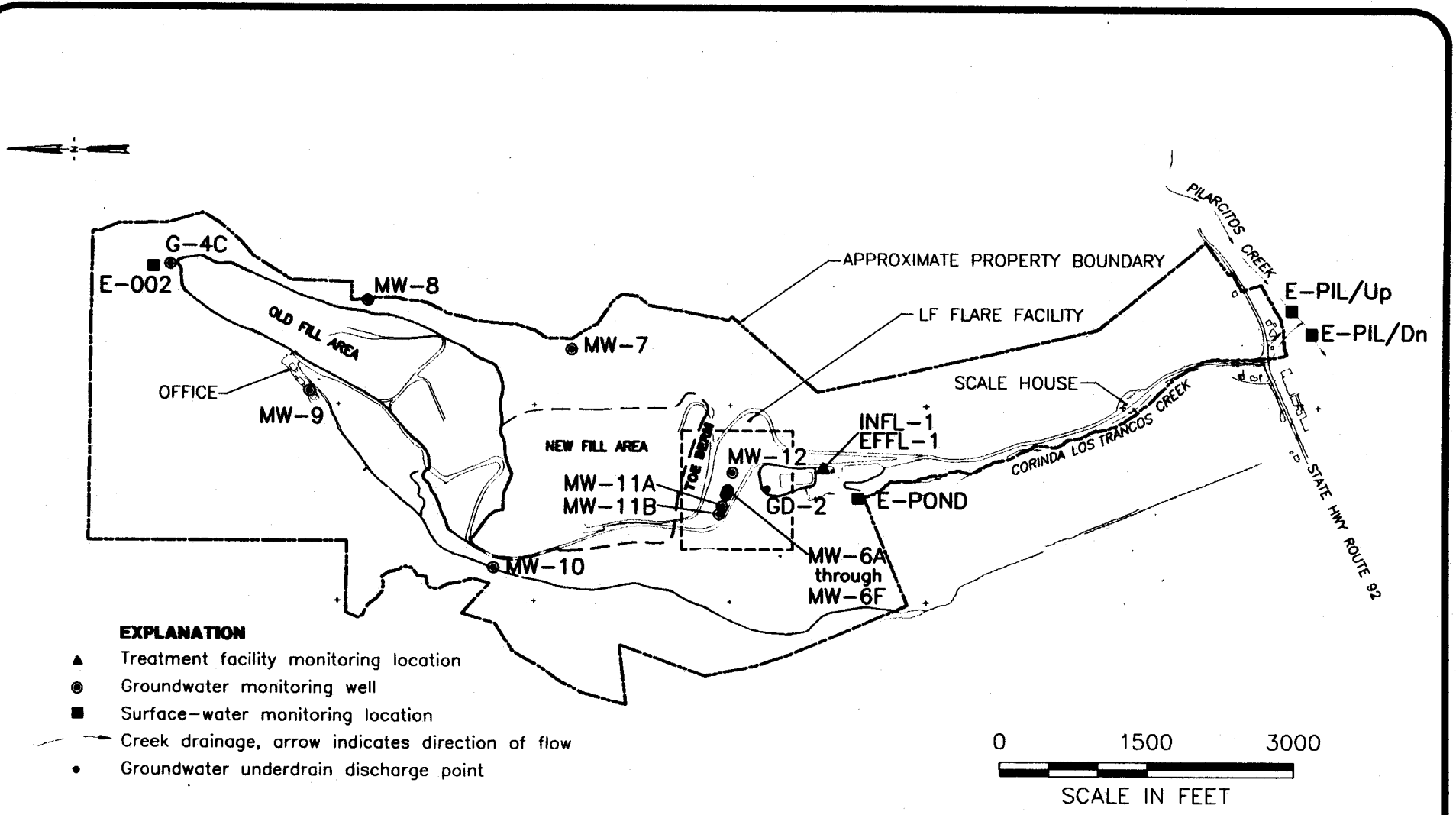

DATE DEC. 1997
DWN KLT
APP
REV
PROJECT NO.
372-009.073

FIGURE A-1
BROWNING-FERRIS INDUSTRIES OF CALIFORNIA
CORINDA LOS TRANCOS LANDFILL
OX MOUNTAIN RANCH
SAN MATEO COUNTY, CALIFORNIA
SITE MONITORING LOCATION MAP